

## PATENT ABSTRACTS OF JAPAN

(11)Publication number : 10-065221  
 (43)Date of publication of application : 06.03.1998

(51)Int.Cl. H01L 33/00  
 H01L 23/29  
 H01L 23/31

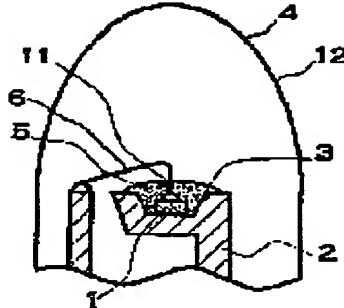
(21)Application number : 09-143157 (71)Applicant : NICHIA CHEM IND LTD  
 (22)Date of filing : 17.05.1997 (72)Inventor : MATOBA KOSUKE  
 KISHI AKITO  
 NAKAMURA SHUJI

## (54) LIGHT-EMITTING DIODE

## (57)Abstract:

**PROBLEM TO BE SOLVED:** Not only to enhance an LED(light-emitting diode) in brightness, when wavelength changing material is contained in LED sealing resin so as to change the LED in wavelength by a method, wherein emitted light changed in wavelength is well condensed but also to provide an LED whose emitted light does not mix with the lights of different wavelengths emitted from another LED located adjacent to it when fluorescent pigment is used.

**SOLUTION:** LED-sealing resin is composed of first resin 11 filled into a cap 3 and second resin 12 which covers the first resin 11. Fluorescent material which changes light, emitted from an LED chip 1 in wavelength or wavelength changing material 5 such as filter material which absorbs light of prescribed wavelength, is contained in the first resin 11, whereby light with changed wavelength is reflected from the cap 3, so that an LED diode of this constitution can be enhanced in brightness and condensing efficiency.



## LEGAL STATUS

[Date of request for examination] 17.05.1997  
 [Date of sending the examiner's decision of rejection]  
 [Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]  
 [Date of final disposal for application]  
 [Patent number] 2998696  
 [Date of registration] 05.11.1999  
 [Number of appeal against examiner's decision of rejection]  
 [Date of requesting appeal against examiner's decision of rejection]  
 [Date of extinction of right]







